

by Bill Droessler

Bill Droessler is senior director of environmental projects for the Minnesota Environmental Initiative, Minneapolis, MN. E-mail: bdroessler@mn-ei.org.

Project Green Fleet

An Innovative and Efficient Voluntary Diesel Emission Reduction Program

In just three years, in a state entirely in attainment of all federal air quality standards, the small nonprofit Minnesota Environmental Initiative took Project Green Fleet (PGF) from the seed of an idea to an award-winning effort.



PGF is part of the Minnesota Environmental Initiative's (MEI) well-established Clean Air Minnesota (CAM) program, a collaborative effort to achieve voluntary air emissions reductions from mobile, area, and point sources and avoid nonattainment of National Ambient Air Quality Standards (NAAQS) in Minnesota. As CAM moved from its pilot phase into a scaled-up effort to reduce air emissions, diesel retrofits and related efforts emerged as one of the most cost-effective and viable opportunities to protect human health and the environment by reducing the risk of toxic air pollutants.

Serving as an example of a diverse partnership that has secured substantial, multifaceted, and sustained funding, PGF began by identifying champions for pioneering diesel emission-reduction efforts in targeted industry sectors.

Three-Pronged Funding Strategy

Three distinct points in PGF's history exemplify specific support from federal, state, and private funding that has aided the project's development.

In CAM's first year, a flexible grant from the U.S. Environmental Protection Agency (EPA) allowed the time and resources to establish the coalition and find practical, meaningful, and feasible voluntary emission reduction activities that could be implemented in Minnesota. This type of funding is hard to find today.

The next infusion of financial support came from private organizations, primarily Flint Hills Resources. The overwhelmingly positive response by private organizations from across the state (double what was envisioned) allowed the program to shift its idea of scale. PGF could look toward retrofitting hundreds of buses statewide and begin to move into new industry sectors earlier than planned.

The next raising of the bar of ambition came with the State of Minnesota authorizing US\$2.4 million



for the retrofitting of school buses in the state. PGF could now realistically take on the goal of retrofitting all eligible school buses in Minnesota.

Continued investment from all three sectors (i.e., federal, state, and private sector) has allowed PGF to blossom and reach heights (and emission and exposure reductions) never dreamed of in the early days. This mix of private, foundation, and local, state, and federal government funding has ensured PGF's continued growth.

Building on this foundation, PGF recently received US\$3 million in federal stimulus funding for diesel emission reduction work. As in the beginning of the project, this strategic infusion of federal funding enables expansion into new technologies and new industry sectors.

The Art of Partnership and the Science of Emission Reduction

MEI researched emission reduction programs around the country, borrowing and modifying elements to use in PGF. For the project to be a success in Minnesota, MEI knew that participation had to be as easy as possible for fleet owners. MEI crafted PGF to work for the collective good of all participants, constructing grants on behalf of multiple organizations. PGF recruits grant partners, writes the grants, administers funds received,

Engine repower work by PGF partner Ziegler-Caterpillar provides local jobs, emission reductions, and cleaner, more efficient engines for years to come. Photo by Andrea Robbins.

<< In 2009, PGF created a comprehensive, multi-year, statewide strategy dedicated to reducing diesel emissions from sectors such as heavy-duty trucks, waste/recycling, mining, and construction equipment. Photo by Bill Allen.

arranges equipment procurement and installation, and writes any reports required. This model allows MEI to purchase equipment in quantities of scale and to establish a statewide installation network. MEI recruits partners large and small, rural and metro, public and private. Almost everyone has an opportunity to participate and no one has to be an expert in grant writing. Organizations only have to be willing to try something new, have some patience with the process, and depending upon the chosen emission reduction activity, provide the required matching funding.

In 2007, MEI and its partners adopted the goal of retrofitting every eligible school bus in the state, estimated at 4000 buses. By the end of 2009, PGF had completed nearly 2000 school bus retrofits statewide and arranged for hundreds more with heavy-duty trucks and equipment. This represents a significant increase in the number of school bus retrofits each year: from 200 in 2006, to 300 in 2007, to more than 700 in 2008. PGF is also arranging for dozens of engine repowers, rebuilds, auxiliary power units, heaters, and a few new purchases. To guarantee standards and emission reduction levels, all of PGF's work is EPA- and/or California Air Resources Board (CARB)-certified.

School Buses and Beyond

Significant and continued federal investment strengthens and expands the bonds that keep the

PGF public-private partnership sustained well beyond specific grant periods. In addition to the direct emission reduction work described, PGF has

- helped partners institute idle reduction policies;
- received more than 21 grants from 11 public and private sources, including three EPA regions, totaling more than US\$8 million for diesel emission reduction work;
- adopted a health and risk-based priority protocol for emission reduction activities;
- created an elementary school air quality curriculum, in partnership with Hamline University, that was used in conjunction with PGF's work in school districts; and
- built an informed, effective, and capable infrastructure of partners and vendors around diesel emission reduction efforts.

In 2009, working with the Minnesota Pollution Control Agency, EPA, and other partners, PGF created a comprehensive, multi-year, statewide strategy dedicated to gaining emission reductions from sectors such as heavy-duty trucks, waste/recycling, mining, construction equipment, farm implements, corporate fleets, rail, port sources, and airport operations. This strategy, titled *Project Green Fleet—Diesel Emission Reduction Strategy for the State of Minnesota*, enables viable, long-term projects to reach the maximum number of vehicles or engines with the minimum outlay of resources for the greatest emission and exposure reductions.

PGF has forged a broad commitment to reduce diesel emissions across many sectors through its efforts to build awareness of the significant health and environmental costs of diesel emissions. In addition, MEI is committed to outreach and communications efforts in support of its diesel emission reduction activities. The primary focus is on private organizations championing and leading the emission reduction work in a specific industry sector or geographic area. This bolsters the commitment of existing partners, attracts new partners, and generates interest and greater knowledge about the PGF coalition's efforts.

When the State of Minnesota authorized US\$2.4 million for the retrofitting of school buses, PGF could realistically take on the goal of retrofitting all eligible school buses in Minnesota. Photo by Andrea Robbins.





IAQVEC 2010 *The 7th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings*

August 15-18, 2010, Syracuse, New York, USA
with Workshops on August 19-20 at NRC, Ottawa, Canada

For more information: <http://www.iaqvec2010.org>
Email: iaqvec2010@syr.edu Phone: +1.315.443.2341

Innovation and Integration

10 Conference Subject Areas

Indoor Environment - Climate and Surrounding Environments - Building Envelopes - HVAC Equipment & Systems
Power & Energy Systems - Sensors, Controls, & Information Management - Modeling and Simulation Tools
Sustainable Building Systems - Safe Buildings

7 Keynote Presentations on Pressing Issues

"Indoor Air Quality and Energy Efficiency: Getting to Netzero without Stinkin' up the Joint", Dr. Andrew K. Persily, NIST, USA
"Benefits of Improved IEQ: Better Health and Improved Work and School Performance", Mr. William Fisk, LBNL, USA
"Energy and IAQ in Rural China: Measurements, Problems and Possible Solutions", Dr. Xudong Yang, Tsinghua U., China
"Densely Populated Urban Environment and its Impact on IEQ", Dr. Shinsuke Kato, Tokyo U., Japan
"Hybrid/Mixed-mode Ventilation and Occupant-adaptive Indoor Environmental Controls", TBD
"Intelligent Buildings and Integrated Solutions", Dr. Derek J. Clements-Croome, U. of Reading, UK
"Potential Impact of Climate Change on Indoor Environmental Quality and Public Health", TBD

For sponsorship & exhibitor details and benefits contact **Holly Rosenthal** (ihrosent@syr.edu)

Hosted by: Syracuse University, Syracuse Center of Excellence in Environmental and Energy Systems, National Research Council Canada, United States Environmental Protection Agency
Endorsed by: A&WMA, ASHRAE, CHVAC, ISIAQ, REHVA, SHASE

Kudos for PGF

The PGF collaboration's hard work and impressive results have not gone unnoticed. PGF has received the following awards and recognition:

- **2008 EPA Clean Air Excellence Award**, one of only two winners nationally in the community action category.
- **2009 Midwest Clean Diesel Initiative Leadership Award (EPA Region 5)** for significant, measurable improvements in air quality through the development and implementation of clean diesel actions.
- **2009 Minnesota Governor's Award for Pollution Prevention**, recognizing superior environmental achievement by Minnesota's businesses, nonprofits, government and institutions.

In addition, PGF recently participated in a White House/EPA/Health and Human Services briefing,

which brought together public health advocates and community leaders, agency experts, and White House officials for a discussion on the lasting public health benefits of a clean energy economy.

These were humbling honors for a small nonprofit organization. But the recognition is a reflection, and justification, of the partnership model, which is fundamental to PGF's work. The foresight in establishing PGF has allowed Minnesota to address air quality problems before they become more serious environmental, health, and economic threats.

For more information, visit the Project Green Fleet Web site at www.projectgreenfleet.org. **em**